

Date: Wed, 13 Jul 94 04:30:23 PDT  
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>  
Errors-To: Ham-Ant-Errors@UCSD.Edu  
Reply-To: Ham-Ant@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Ant Digest V94 #220  
To: Ham-Ant

Ham-Ant Digest                      Wed, 13 Jul 94                      Volume 94 : Issue 220

Today's Topics:

    AEA Isoloop: vertical or horizontal?, VS. MFJ Loop? (2 msgs)  
        Antenna on my boat??  
        Commercial 33 cm Yagi?  
        RDF kit order lost (2 msgs)  
    Request help identifying this antenna.  
        Rohn Tower (3 msgs)  
        Simple antenna  
        SWR vs Frequency Excursion

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>  
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: Mon, 11 Jul 1994 20:45:41 GMT  
From: ihnp4.ucsd.edu!usc!math.ohio-state.edu!news.acns.nwu.edu!news.eecs.nwu.edu!  
tellab5!chinet!megabyte@network.ucsd.edu  
Subject: AEA Isoloop: vertical or horizontal?, VS. MFJ Loop?  
To: ham-ant@ucsd.edu

Well, the C&CR's here state "No antenna may exceed the height of your  
rooftop by more than seven ft.", so the AEA Isoloop looks like one of the  
better bets I'll get here. Does anyone have any thoughts (or better,  
experience) on mounting it vertical vs. horizontal? Clearly, vertical  
mounting will result in some directionality, but what other differences  
will occur?

Also, the MFJ loop is certainly cheaper than the AEA loop, but does anyone  
have any comparison experience between the two? With MFJ, my main concern

would be construction quality. I'd trust AEA, I'm wary of MFJ.

--

"It is a pity that even a single drop of this noble  
gift of God should be spilled" - J.S. Bach on wine  
Mark E. Sunderlin: Technocrat in Winchester, VA KD4HRI  
aka Dr. Megabyte: megabyte@chinet.chinet.com (703) 722-9330

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Date: 12 Jul 1994 14:00:29 GMT  
From: ihnp4.ucsd.edu!library.ucla.edu!europa.eng.gtefsd.com!  
newsxfer.itd.umich.edu!news.cic.net!phillips@network.ucsd.edu  
Subject: AEA Iso-loop: vertical or horizontal?, VS. MFJ Loop?  
To: ham-ant@ucsd.edu

megabyte@chinet.chinet.com (Dr. Megabyte) writes:

>... so the AEA Iso-loop looks like one of the  
>better bets I'll get here. Does anyone have any thoughts (or better,  
>experience) on mounting it vertical vs. horizontal? Clearly, vertical

I have had an AEA Iso-loop up for almost two years. It works. Be prepared for very narrow bandwidth, though. Except on the highest bands, you must retune the loop for any frequency change of more than a few kHz. It takes some getting used to. I have not mounted my loop in a vertical orientation, but I have had it mounted on a mast that extended out from the side of the house horizontally. From that experience, I'd recommend against the vertical orientation. Yes, it would have some slight directional properties, but the orientation of the mast in relation to the loop raises SWR quite a bit and reduces overall ERP. This was a metal mast, perhaps a non-metal mounting arrangement would be better. Mounted with the loop plane oriented perpendicular to the mast, the loop radiates well and is quite effective.

--

Gary Lee Phillips	<phillips@colum.edu>
Computer Services Librarian	(312) 663-1600 x359
Columbia College, Chicago	#include <std_disclaimers.here>

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Date: Tue, 12 Jul 1994 16:08:31 GMT  
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!gatech!kd4nc!ke4zv!  
gary@network.ucsd.edu  
Subject: Antenna on my boat??  
To: ham-ant@ucsd.edu

In article <2vak22\$psk@eis.calstate.edu> nhickso@eis.calstate.edu (Nathan M. Hickson) writes:

>  
> I posted about this is rec.radio.cb and got no replys so now I'm  
>trying here...I need to put a cb in my 18 foot boat for the summer and I need  
>help with the antenna. The boat is all fiberglass except for a little  
>wood and some chrome railing around the outside. My problem is how do I  
>get a ground plane without any metal on the boat. Do I use the lake? My  
>idea would be to put a copper plate about 5 in by 5 in on the bottom of  
>the boat and run a hefty ground wire to the antenna ground. Would this  
>work...Would the lake be a sufficient ground...HELP...I dunno what to do  
>!!

A 5 inch by 5 inch copper plate won't be much of a groundplane. You should use something larger, like 5 \*feet\* by 5 \*feet\* copper plate. The plate doesn't have to be very thick in fresh water, copper foil tape may work well enough.

Probably a better idea though is to use a halfwave radiator so you don't \*need\* any groundplane. That's an 18 foot whip on 11 meters, and you'll need a matching network to match to the high base impedance, but it won't need a groundplane at all. You can center feed it and avoid the matching network, its center impedance will be close enough to 50 ohms to satisfy your transceiver. A good mechanical arrangement is to use aluminum \*pipe\* for the lower half of the element and thread the coax \*inside\* the pipe up to the join. The join should be a PVC coupling to a normal CB whip. Hook the shield to the pipe and the center to the whip at the join, and you're in business. Watch out for low bridges!

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

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Date: Tue, 12 Jul 1994 01:54:41 GMT  
From: netcomsv!netcom.com!junger@decwrl.dec.com  
Subject: Commercial 33 cm Yagi?  
To: ham-ant@ucsd.edu

H. Peter Anvin (hpa@solo.eecs.nwu.edu) wrote:

: Hi there,  
: do anyone of you know where I could find a reasonably sized 33 cm  
: (902-928 MHz) premanufactured Yagi antenna? I unfortunately have no  
: capability to make my own. With "reasonably sized" I mean something  
: with a single-digit gain over a dipole.

: All the catalogues I have looked in list only 2 m, 1.25 m, 70 cm and  
: 23 cm.

: Thanks in advance,

: /hpa

Larson has 2 models (YA6 900 and YA5 900).

73,

jack

: --

: INTERNET: hpa@nwu.edu FINGER/TALK: hpa@ahab.eecs.nwu.edu  
: IBM MAIL: I0050052 at IBMMAIL HAM RADIO: N9ITP or SM4TKN  
: FIDONET: 1:115/511 or 1:115/512 STORMNET: 181:294/101 Allah'u'abha  
: Amicule, deliciae, num is sum qui mentiar tibi?

--

Jack Unger K6XS (junger@netcom.com)

Advertisement: I design and install wireless LANs and WANs. (408) 335-2439

Social Comment: A gun, in a moment of anger, turns a law-abiding citizen  
into a criminal.

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Date: 12 Jul 94 00:39:15 -0800

From: ihnp4.ucsd.edu!usc!nic-nac.CSU.net!vax.sonoma.edu!harrisok@network.ucsd.edu

Subject: RDF kit order lost

To: ham-ant@ucsd.edu

In article <CssAu6.ADI@nntpa.cb.att.com>, wa2sff@arch4.ho.att.com () writes:

> At the Dayton Hamfest there was a fellow selling RDF kits  
> based on the May 93 article in QST on the "Handi-Finder."

>

> I bought a kit and it works fine.

>

> I then followed up with an order for 25 kits for our  
> local ham radio club and RACES group.

Just what type of RDF kits were these? I never saw the article...

73,

Ken Harrison

N6MHG

email: harrisok@sonoma.edu

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>  
>  
> Note that the antenna is constructed in a single plane.  
> Viewed from above, it would look something like this....

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      -----
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    \          /
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      \      /
      -----
      null

```

>  
>Is it possible to tell if it is a receiving antenna?

All antennas can be used for receiving. This antenna is probably used for transmitting too, however.

>Is it possible to determine the direction of the incoming signal if I know what direction the antenna is facing?

The pattern is roughly omni-directional. There are two narrow nulls as shown in the diagram.

>Do we have any idea what its range of frequency might be?

It's a UHF antenna, likely in the 450-470 MHz range.

>Is there anything that this design tells us about its use?

It's likely a repeater or paging system antenna, though it's possible it's a base station antenna.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

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Date: Tue, 12 Jul 1994 13:07:49 GMT  
From: ihnp4.ucsd.edu!usc!math.ohio-state.edu!darwin.sura.net!rsg1.er.usgs.gov!

junger@network.ucsd.edu  
Subject: Rohn Tower  
To: ham-ant@ucsd.edu

I have a chance to buy a Rohn Tower, which is made up of 5 sections that are label "20G". I'm think of putting this up alongside my barn. I can't find any specs on this type of Rohn section, but suspect that it is a lower "strength" version of "25G".  
Can anyone help?

Thanks and 73 - John, W3G0I

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Date: Tue, 12 Jul 1994 13:33:19 GMT  
From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!darwin.sura.net!  
fconvx.ncifcrf.gov!mack@network.ucsd.edu  
Subject: Rohn Tower  
To: ham-ant@ucsd.edu

In article <1994Jul12.130749.12561@rsg1.er.usgs.gov> junger@rsg1.er.usgs.gov (John Unger) writes:

>I have a chance to buy a Rohn Tower, which is made up of 5 sections  
>that are label "20G". I'm think of putting this up alongside my  
>barn. I can't find any specs on this type of Rohn section, but  
>suspect that it is a lower "strength" version of "25G".  
>Can anyone help?  
>  
>Thanks and 73 - John, W3G0I  
>

Go to the horse's mouth - call Rohn.  
Joe Mack NA3T  
mack@ncifcrf.gov

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Date: 12 Jul 1994 14:32:29 GMT  
From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!math.ohio-state.edu!  
magnus.acs.ohio-state.edu!csn!col.hp.com!fc.hp.com!jayk@network.ucsd.edu  
Subject: Rohn Tower  
To: ham-ant@ucsd.edu

(John Unger) writes:

: >I have a chance to buy a Rohn Tower, which is made up of 5 sections  
: >that are label "20G". I'm think of putting this up alongside my  
: >barn. I can't find any specs on this type of Rohn section, but  
: >suspect that it is a lower "strength" version of "25G".

: >Can anyone help?  
: >Thanks and 73 - John, W3G0I

Joe Mack (mack@ncifcrf.gov) wrote:  
: Go to the horse's mouth - call Rohn.  
: Joe Mack NA3T

Good idea to call Rohn. Besides the info on specific tower types their catalog contains almost everything you could ever want to know about tower installation. It even has nice drawings you can use to get a building permit.

Rohn 20 is the same size as 25G but built with a little lighter material. It will mate up with 25G (I've done it). I currently have three sections of 20G with a Cushcraft A3 on top. The tower is attached to my pole barn at the bottom and at nine feet.

I once had up 67 feet of 20G guyed three times with a HyGain 204 (four element 20m yagi) just above the tower and a HyGain 402 (two element shorty 40m yagi) eight feet above the tower. It held up OK but this far exceeds Rohn's specs for 20G. Of course their specs have so much safety factor built in that their numbers might indicate you need 45G for just an average size tribander.

73, Jay K0GU jayk@fc.hp.com

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Date: 12 Jul 1994 00:10:17 GMT  
From: netcomsv!netcomsv!tbn128.thomas.com!usenet@decwrl.dec.com  
Subject: Simple antenna  
To: ham-ant@ucsd.edu

I am interested in making a simple antenna for my Realistic DX - 440.

If I set up separate antenna wires for each frequency band that I am interested in (16, 19, 25, 31, 41, 49 meter bands) can I connect them to my radio with one wire or will that affect their performance? Should I use coax between my antennas and my radio? What is the best wire to use for my antennas?

Any feed back would be greatly appreciated.

Tom Ferch

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Date: 12 Jul 1994 06:57:10 GMT  
From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!news.cac.psu.edu!



news.pop.psu.edu!psuvax1!ukma!asuvax!chnews!scorpion.ch.intel.com!  
cmoore@network.ucsd.edu  
Subject: SWR vs Frequency Excursion  
To: ham-ant@ucsd.edu

>paul Veltman (veltman@netcom.com) wrote:

>> When an antenna is at resonance, assuming no reactance, there should be a  
>> 1:1 VSWR. When the VSWR is measured on excursions of a given frequency,  
>> the VSWR is always less as the frequency goes up from resonance than when  
>> it goes down. Why. What is the theory behind the why.

>

Hi Paul, First, do a system reset of your brain... A full-wave \_resonant\_  
center-fed dipole will show a 100/1 SWR. Resonance means no reactance...  
but it doesn't say anything about resistance. If you have a half-wave  
dipole with a radiation impedance of 45 ohms and feed it with a 450 ohm  
ladder-line you will have an SWR of 10/1. Half-wave resonant dipoles can  
vary from approximately 33 ohms to approximately 100 ohms depending on  
a lot of factors. The only condition where you get a 1/1 SWR is when the  
reactance of the antenna is zero and the resistance equals the  
characteristic impedance of the transmission line and that is fairly rare.

Why do you worry about a 1/1 SWR? What harm is there in doing something else?  
My 88 ft dipole has an SWR of 80/1 on 75m but suffers only about 1 dB loss  
because of it. If you use near lossless transmission line like 450 ohm ladder-  
line and have a good antenna tuner, your total loss will be less than 1 dB  
even with an 80/1 SWR. SWR does not matter if you know what you are doing!

If you are using 200 ft of RG-58 on 440 MHz with an SWR of 10/1...forget it!

But if you are using 100 ft of 450 ohm ladder-line on 4 MHz you don't need  
to worry about SWR as long as your antenna tuner can match the antenna  
system.

Take a look at the loss charts at the end of the Transmission Lines chapter  
in the ARRL Handbook. This is one of the least understood concepts in Ham  
Radio. SWR DOESN'T MATTER IF YOU KNOW WHAT YOU ARE DOING!!!

I remember when coax was too expensive for the average Ham to afford. Did  
that slow him down?... not a bit... he built ladder-line with six inch  
spacing, used an antenna tuner and suffered negligible losses due to SWR...  
he didn't even have an SWR meter... he just tuned his pi-network to properly  
load his 813's.

A little knowledge is a dangerous thing. SWR matters sometimes but not all  
the time!!! For God's sake, learn when it matters and when it doesn't!!!

73, KG7BK, ex-W5DXP, OOTC, CecilMoore@delphi.com

